

AUTOMATED METHOD FOR ANALYZING AND COMPARING FINANCIAL DATA

Technical Field

5 The present invention relates to the area of
financial data analysis.

Background Art

10 In order for companies to remain competitive,
companies must always monitor their revenues, sales and
costs and determine the basis for changes in these items
from one period to another period. Companies generally
maintain income statements which reflect the various
sources of revenue in addition to the origins of various
costs.

15 Generally, income statements are produced in a
spreadsheet hard copy format in which corporate
accountants must manually sift through the information
to determine reasons for differences in revenue, costs
or profit from one period to another period. However,
this method of financial analysis is labor and time
20 intensive and expensive to companies. Accordingly, a
need has developed for an improved and automated method
of analyzing financial data.

Disclosure Of Invention

25 A principal object of the present invention is
to provide a automated method of analyzing financial
data.

It is another object of the present invention to provide a method of analyzing data through the evaluation of standardized financial variables.

It is yet another object of the present
5 invention to provide variance calculations for different time dimensions or views.

In carrying out the above objects and other objects and features, an improved and automated method of analyzing data is provided. The method preferably
10 but not necessarily includes the steps of: gathering data from at least one field in two different financial statements; applying a volume variance subroutine against the gathered data; applying a mix variance subroutine against the gathered data; applying a net
15 revenue change variance subroutine against the gathered data; applying a cost change variance subroutine against the gathered data; applying an exchange variance subroutine against the gathered data; applying a one-time variance subroutine against the gathered data; and
20 reporting the results of the volume variance subroutine, the mix variance subroutine, the net revenue change variance subroutine, the cost change variance subroutine, the exchange variance subroutine, and the one-time variance subroutine.

25 Brief Description Of Drawings

Figure 1 is a flowchart which illustrates the method of the present invention;

Figure 2 is a flowchart which illustrates the volume variance subroutine.

30 Figure 3 is a flowchart which illustrates the mix variance subroutine;

Figure 4 is a flowchart which illustrates the net revenue change variance subroutine;

Figure 5 is a flowchart which illustrates the cost change variance subroutine; and

5 Figure 6 is a flowchart which illustrates the exchange variance subroutine.

Best Mode For Carrying Out The Invention

With reference to Figure 1, the method of the present invention is illustrated. As shown, the method of the present invention includes several steps which preferably but not necessarily may occur in the following order. First, data must be gathered 10 from at least one field in two different financial statements. The field in the financial statement 15 includes financial information relating to a first period or view and a second period or view. When the a view is used in lieu of a period, the same period may be analyzed and compared based upon different factors such as comparing the same time period under two different 20 forecasts.

The financial statement is preferably an income statement which identifies several components of a financial system. The field or fields in the financial statement may include but is not limited to 25 information such as product sales to dealers, marketing incentives, material costs, other costs and the like. The data in each field may be defined not only by the field itself but by a pre-determined time period such as a month, quarter, or year. Upon obtaining the data from 30 each field, at least one subroutine 14 18 22 26 30 34 is applied against the data. In some cases, the system

determines 12 16 20 24 28 32 whether the subroutine
applies to a particular field in the financial
statement. For example, the exchange subroutine might
not be applied against a field relating to payroll in
5 the event that there is no correlation between exchange
rates and the payroll costs.

The subroutine or subroutines applied against
the data are based upon causal factors which
historically affect changes in revenue, costs or
10 profits. For example, the present invention preferably
involves six causal factors: (1) volume factor; (2) mix
factor; (3) net revenue change factor; (4) cost change
factor; (5) exchange factor; and (6) one-time factor.
The six preferable factors are generally the basis for
15 explaining changes in revenue, costs or profit.

The volume factor affects revenue and/or cost
as product volume or number of products manufactured
and/or sold changes. The mix factor affects revenue
and/or cost as the sales of an upgraded version of a
20 product in a series changes relative to a downgraded
version. The net revenue change factor affects revenue
as prices or marketing incentives change. The cost
change factor illustrates how product program changes,
ongoing product development changes, non-design changes
25 or sourcing may affect cost. Finally, the exchange
factor may affect revenue or cost as the exchange rate
between two different currencies changes.

As shown in Figure 2, the volume factor
subroutine is further illustrated in a flowchart format.
30 The volume factor subroutine compares the data from the
first period or view and the second period or view and
identifies the revenue and cost differences due to
differences in product volumes, measured at consistent

price and exchange rate. The subroutine preferably applies the formula of $(V2-V1) * P1 = VV$. V1 is the total volume of products sold in period 1, and V2 is the total volume of products sold in period 2. P1 is the average product price or cost from period 1 and VV is the volume variance or the revenue/cost difference due to a change in product volumes. The volume factor subroutine further breaks down the data according to several sub-components: total industry, market share, mix among product lines, and dealer stock levels. The volume factor subroutine begins by retrieving 38 the aggregated extended revenue or costs for products in a first period and in a second period. The first period or view and the second period or view may be of any comparable length such as a quarter or a year. Second, the system retrieves 40 data such as the total number of products sold during the first period and the total number of products sold during the second period. Third, difference between the number of products sold in the first period and the second period is calculated 42. Fourth, the system computes 44 the average price or cost of the product-at-issue during the first period and during the second period. Fifth, the average price or cost during the first period is multiplied 46 by the difference in number of products sold between the first period and the second period. The resulting product is the volume variance which reflects the revenue and cost differences due to a change in product volume.

Referring now to Figure 3, the mix variance subroutine is further illustrated in a flowchart format. The mix variance subroutine determines the revenue and cost differences between the first period and the second period due to differences in the configuration mix

within a product line and differences in option
installation rates. This subroutine includes revenue
and cost changes from options made standard and standard
equipment made optional. The mix is measured at
5 consistent price and exchange rates. The preferable
formula applied from the data gathered is:

(MRC*P1)*V2=MV. MRC is the mix rate change. P1 is the
average price or cost from period 1 by configuration and
option. V2 is the total volume from period 2. In

10 performing this subroutine, first, the total revenue
generated from a series of products and any additional
options is calculated 48 for the first period and for
the second period. Second, the total volume of products
sold from a particular series and any additional options
15 applicable to that series is calculated 50 for the first
period and the second period. Third, the average price
or cost for each series and each option is calculated 52
for the first period and for the second period. Fourth,
the percentage sold of each type of product and option
20 in the series is calculated 54 for the first period and
the second period. Fifth, the net change in percentage
for each type of product and option in a series is
calculated 56. Sixth, the net change in the percentage
may then be multiplied 58 by the average price in the
25 first period and the total volume from the second period
to obtain the mix variance or the revenue/cost
difference due to a change in mix among configurations
within a product line or a change in installation rate
of options. This subroutine may apply to financial
30 statement lines which involve product sales at
dealerships, material costs or warranty costs and other
similar items.

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With reference to Figure 4, the net revenue change subroutine is further illustrated in a flowchart format. The net revenue change subroutine determines the revenue differences due to differences in product sales prices or marketing incentives and other reasons not defined in any of the other revenue causal factors. The net revenue change is measured at consistent volume and exchange rates. This subroutine may be summarized in the following mathematical equation: $NRCV = (P2 - P1) * V2$. P1 is the average price or cost from the first period or view. P2 is the average price or cost from the second period or view. V2 is the volume from period 2 by configuration and by option. The first step of this subroutine involves retrieving 60 revenue from the first period and the second period with respect to each configuration and option available in a particular product line. The second step involves retrieving 62 the volume sold for each configuration in a series and each option purchased. Third, the average price for each configuration and option is calculated 64 for the first period and the second period. Fourth, the change in the average price for each configuration and each option is calculated 66. Fifth, the change in the average price for each configuration is multiplied 68 against the volume for that particular configuration in the second period to obtain a resulting product for each configuration and option. Sixth, the resulting products for each configuration and option are summed 70 up to determine the net revenue change variance. As indicated above, the net revenue change variance is the revenue difference due to a change in per unit selling price or per unit variable marketing rate.

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Referring now to Figure 5, the cost change variance subroutine is illustrated in a flowchart format. The cost change factor subroutine determines the cost differences due to product program changes, ongoing product development changes, non-design changes, sourcing and other reasons not defined in any of the other cost causal factors. This is measured at consistent volume and exchange rates. This subroutine may be summarized by the following mathematical equation: $CCV = V2 * CC2$. V2 is the total volume from the second period. CC2 is the per unit cost changes for the second period by causal factor. The first step of this subroutine involves retrieving 72 the material cost change per unit for the first period and for the second period. Second, the subroutine obtains 74 the product volumes by configuration for the first period and for the second period. Third, the product volume of the second period is multiplied 76 by the cost change in the second period. The resulting data from this subroutine is the cost change variance which illustrates cost differences due to product program changes, ongoing product development changes, non-design changes, or sourcing out labor to contractors.

With reference to Figure 6, the exchange factor subroutine is in a flowchart format. The exchange factor subroutine determines the revenue and cost differences due to differences in currency exchange rates. The exchange factor subroutine involves the following mathematical formula: $EV = CD - (CL * XR1)$. CD is the change in the financial statement line item in the desired currency. The desired currency is the financial amount stated in the currency being reported in a financial statement. CL is the change in the

financial statement line item in the local currency.
The local currency is the revenue or the amount denoted
in the currency of a country in which financial activity
occurs. XR1 is the exchange rate between the two
5 currencies from the first period. The subroutine
includes several steps. First, the system retrieves 78
the revenue or cost stated in the local currency and in
the desired currency for the first period and the second
period. Second, the system gathers 80 the exchange rate
10 between the local currency and the desired currency for
the first period and for the second period. Third, the
system calculates the difference between the financial
amounts of the first period and the second period with
respect to the local currency 82 then, fourth, with
15 respect to the desired currency 84. Fifth, the change
in the local is multiplied 86 by the exchange rate of
the first period resulting in a preliminary variance
amount. Sixth, the preliminary variance amount is
deducted 88 from the previously determined difference
20 between the first period and the second period stated in
the desired currency. The resulting difference is the
exchange variance which reflects the revenue and cost
differences due to a change in exchange rates.

With respect to the one-time factor
25 subroutine, this subroutine may be modified according to
the particular circumstances during the specified time
periods. This subroutine determines the variance in
revenue or cost for unusual or infrequent items such as
a plant shutdown or employee separation programs. The
30 unique parameters of the unusual circumstance are
accounted in determining changes in revenue or cost from
a first period to a second period.

The words in the specification are words of description rather than limitation, and it is understood that various changes may be made without departing from the spirit and scope of the invention.

5 While the best mode for carrying out the invention has been described in detail, those familiar with the art to which this invention relates will recognize various alternative designs and embodiments for practicing the invention as defined by the following
10 claims.

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